

SWITCHED REACTANCE MODULATED E-CLASS OSCILLATOR

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. patent application Ser. No. 10/180,882, filed June 26, 2002 and patent application Ser. No. 09/973,486, filed Oct. 5, 2001. This application is also based upon and also claims priority to U.S. provisional applications Ser. No. 60/459,908, filed March 21, 2003, and Ser. No. 60/462,215, filed April 11, 2003. This application is also related to U.S. Provisional Application Ser. No. 60/238,488, filed Oct. 6, 2000. The content of all of these applications are incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] 1. *Field*

[0003] This application relates to drive coils that generate a magnetic field to supply power and operational commands to a remote receiving coil. This application also relates generally to E-class oscillators.

[0004] 2. *Related Art*

[0005] Many applications require or would benefit from improved efficiency in L-C tank circuit oscillations. Achieving such efficiency, however, can be problematic. One problem is now presented in the context of an exemplary application involving BIONic Neurons (BIONs). This problem as well as other can also be present in other applications.

[0006] BIONs include micro, electrical stimulators that can be implanted within a body. BION implants may be placed in or near nerves or muscles to be electrically stimulated or at other locations. BIONs may be elongated with metallic electrodes at each end that deliver electrical current to immediately surrounding biological tissues. The implantable electronic devices may be hermetically sealed with metallic electrodes attached thereto. They may contain electronic circuitry. BION implants may be about 100 times smaller in volume than conventional implantable electronic devices such as cardiac pacemakers and cochlear implants. Their small size can result in significant physical limits on power, data transmission and packaging.